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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,185	08/25/2003	Herwig Assler	4549	4413

21553 7590 12/20/2004
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EXAMINER

LAVINDER, JACK W

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,185

Applicant(s)

ASSLER ET AL.

Examiner

Jack W. Lavinder

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/25/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recess (20) for receiving the rivet head in both the first and second sheet metal end portions, as defined in claim 11, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term ""Hi-Lok" in claim 10 is a relative term which renders the claim indefinite. The term "Hi-Lok" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Also, the use of tradenames in a claim is not permitted. It renders the claim indefinite because the specifications of the rivet termed "Hi-Lok" could change over time. Therefore, it is not possible to determine the metes and bounds of this limitation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hart-Smith, 5297760.

6. Regarding claim 1, Hart-Smith discloses a splice (figures 4-9) for connecting thin walled components (46, 48). The splice comprises

A first end portion (50)

A second end portion (52)

An overlapping contact area (figure 7, the area between 50 and 52)

A first row of rivets (60, figure 5)

A second row of rivets (66 or 68) located between an end portion edge and the first row of rivets

The specification discusses the problem of too much stress occurring on the first row of rivets (60). To solve the problem, the specification adds a set of fingers (54) or holes (74) to make the end edge of the plate (48) more flexible than the rest of the plate (col. 3, lines 38-49). It is silent as to what is meant by the term flexible. However, Hart-Smith does stress that the lollipopped fingers softens the load transfer going to the first row of rivets (60), thereby, prolonging the fatigue life of the joint.

7. The claim states that the second row of rivets permits a relative motion of the first and second end portions in a direction parallel to the overlapping contact surface area. Hart-Smith is silent as to the type of motion that occurs as a result of the fingers. All it states is that the end portion of the plate is now flexible and softens the load transferred to the first row of rivets (columns 5 and 6). However, the examiner believes that Hart-Smith inherently discloses that the connected parts move relative to one another in a direction parallel to the overlapping contact surface area.

8. Gondek discloses that it is well known that riveted parts under strain will allow relative movement between the connected parts. (col.1, second paragraph).

“When two parts are riveted, bolted, screwed or pinned together and then are subjected to a strain, there is a tendency for the connecting element to shear or for the holes accommodating the connecting elements to become enlarged. This tendency is created by the strain tending to produce relative movement between the connected parts.”

Therefore, this provides evidence of the inherency of Hart-Smith's riveted joint, which allows motion between the connected parts.

9. Regarding claim 12, Hart-Smith discloses parallel rows of rivets (figures 4 and 5).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 3, 5-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hart-Smith in view of Stevens, 4394096.

12. Regarding claim 2, Hart-Smith fails to disclose a rivet having a rivet closure. However, Hart-Smith does disclose that a variety of fasteners can be used to connect the two parts, such as, bolts, rivets or pin-collar combinations (column 1, lines 52-59).

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13. Stevens discloses a rivet (figure 2) for connecting two dissimilar materials (1, 2) together while allowing one of the materials to laterally move relative to the other material. The rivet includes a rivet closure or nut (15) for providing a clamping force to connect the two materials together.

14. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the bolt and rivet closure fastener, as taught by Stevens, to connect the two parts in Hart-Smith, since either type of fastener would work equally as well as the other since they both solve the same problem of applying a clamping force to connect the two parts.

15. Regarding claims 3 and 9, Hart-Smith fails to disclose the specifics of the fasteners. Stevens discloses a first shaft diameter (6) and a second smaller shaft diameter (numeral 3 in figure 1 is pointing at the reduce diameter portion of the rivet shaft). A gap (12) is formed between the part and the shaft of the fastener. This gap (12) allows relative lateral movement of the bolt (3) and the liner (1) with respect to the substrate (2) to accommodate linear expansion and contraction of the liner (1).

16. It would have been obvious to a person having ordinary skill in the art to use the fastener, which provides lateral movement between the connected parts, as taught by Stevens, in place of the fasteners in Hart-Stevens. The use of Stevens' fasteners will extend the useful fatigue life of the rivets in Hart-Stevens by reducing stresses on the rivet due to linear expansion and contraction between the connected parts due to either thermal stresses or structural skin stresses.

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17. Regarding claims 5 and 6, Stevens discloses a press fit between the first shaft diameter (6) and the wall of the rivet hole (col. 3, lines 19-26). The reasons for combining Stevens with Hart-Smith are set forth above.

18. Regarding claim 7, Stevens discloses a shaft shoulder (4). The reasons for combining Stevens with Hart-Smith are set forth above.

19. Regarding claim 8, both Hart-Smith and Stevens disclose an axial shaft length that allows the application of a defined clamping force.

20. Regarding claim 11, Stevens discloses a recess (10) for receiving a head of the fastener. Furthermore it is notoriously old and well known to provide a countersink for a fastener in order to flush mount the fastener relative to the connecting part.

21. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to countersink the hole in Hart-Smith, as taught by Stevens, in order to flush mount the fastener in the part to prevent anything from "catching" on the head of the fastener, to provide a more aerodynamic surface, or for aesthetics or as indicated in Stevens, to be able to apply a seal to the head of the fastener to prevent moisture or water from seeping into the interior of the two connected parts (prevents contamination or rusting of the fastener).


22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koffi discloses splicing two planar parts with rivets.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack W. Lavinder whose telephone number is 703-308-3421. The examiner can normally be reached on Mon-Friday, 9-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jack W. Lavinder
Primary Examiner
Art Unit 3677

12/13/04